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A PRELIMINARY PLAN FOR THE LOS ANGELES ZOOLOGICAL PARK AND AQUARIUM

By Charles Lincoln Edwards, Ph. D.
Secretary of the Los Angeles Zoological Society
Naturalist of the Park Department, City of Los Angeles

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Charles Lincoln Edwards, Ph. D.
Director of the Zoological Park and Aquarium
Los Angeles, California
U. S. A.

An exchange of publications is requested

GRIFFITH PARK

A PRELIMINARY PLAN FOR THE LOS ANGELES ZOOLOGICAL PARK AND AQUARIUM

By Charles Lincoln Edwards, Ph. D.
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There is a universal desire to travel and thus become familiar with the strange animals of other lands and yet the masses of our city are unable to accomplish this. In a great modern zoological park and aquarium, all the remarkable creatures from distant parts of the earth and from the air and sea can be assembled under natural conditions and observed to even better advantage than in their native haunts.

The present zoo in Eastlake Park is typical of the past when wild animals were miserably imprisoned behind iron bars and confined in unwholesome pens. The conditions there are not only unsatisfactory but should be condemned by the Humane Society. Our citizens are awakening to the necessity of a new zoological park planned along the lines of that in New York City, and Hagenbeck's notable animal park at Stellingen, Germany.

To further this great project, the Los Angeles Zoological Society was incorporated August 3, 1911. On July 15, 1912, the following officers and additional members of the Board of Directors were elected:

Judge Charles Silent, President.
J. B. Lippincott, First Vice-President.
John B. Miller, Second Vice-President.
J. A. Graves, Treasurer.
Charles L. Edwards, Secretary.

H. W. O'Melveny, C. F. Holder, M. J. Connell, Edward D. Silent, William A. Edwards, H. W. Keller, Edward B. Tufts,

William Lacey, William G. Kerckhoff, W. L. Valentine, John H. Schumacher, Jaro Von Schmidt.

As in London, Berlin, New York, and other cities, this Society will be a most important factor in the creation and development of our zoological park and aquarium. The Society is designed to raise funds and to bring about such co-operation between the city and state authorities and this organization, that the members may be enabled to exercise a direct voice in the control and advancement of the institution. The Zoological Society has the approval and endorsement of the Board of Park Commissioners, and correspondence is invited from all who are interested in the aims of the organization as herein set forth. Membership in the Zoological Society is open to all. The membership fee is $10.00 with annual dues of $10.00. The additional fees for advanced membership are as follows:

Life Member	$ 200.00
Patron	1,000.00
Associate Founder	2,500.00
Founder	5,000.00
Benefactor	25,000.00

Life Members, Patrons, Associate Founders, Founders, and Benefactors are exempt from annual dues.

In the wonderful climate of Southern California ideal conditions are found for wild animals in the open where they may be as much at home as in Yellowstone Park, or in the ranges of the Duke of Bedford at Woburn Abbey, England. Indeed, they would be protected from enemies who seek to destroy them at every turn in nature. Park Commissioners Silent, O'Melveny and Lippincott have outlined such a zoo as a prominent feature in the development of Griffith Park. Here we are fortunate in not having to construct large and expensive buildings such as have been deemed necessary in the housing of animals in some of the older zoological gardens. Griffith Park, with an area of three thousand acres and a boundary line of ten miles in extent,

is the second largest municipally owned park in the world. On Mt. Hollywood, 1647 feet high, one is surrounded by verdure clad mountain-sides and wooded valleys. Out beyond is the great city with its towering castles of commerce and many homes. Here we should have a zoological park unrivalled in natural beauty. Hagenbeck was obliged to build artificial mountains and cliffs at a large outlay of time and money. In the construction of their zoological park, the New York Zoological Society has contributed $475,000.00 and the City of New York, over $2,000,000.00. We have but to use the mountains and valleys generously provided by nature and then we shall have

VIEW FROM THE HEIGHTS IN GRIFFITH PARK

a more magnificent plant than exists in any city in the world. How fine a sight to behold from the winding trails, a herd of antlered elk browsing in the valley or a band of a hundred bighorns surmounting the distant crags! The fences and moats necessary for the proper care of the animals and the protection

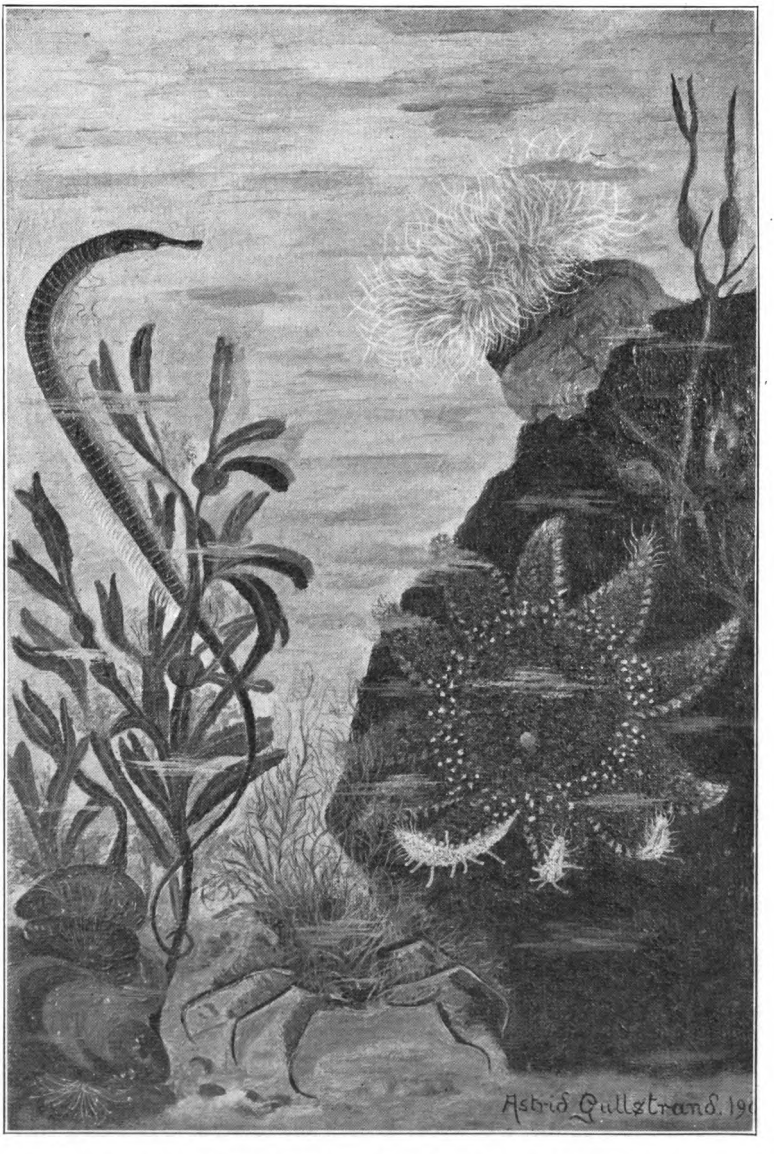
of the visitors would always be concealed as nearly as possible to preserve the atmosphere of the wild.

If we should establish six ranges varying in area from fifteen to one hundred and twenty-five acres, it would necessitate 19,000 feet of fencing at a cost of $5,000. Fifteen palm-thatched shelters would add $1000. The rock blasting and excavation for four open caves together with the concrete construction of floors, walls, moats, tunnels and inner dens would cost $20,000. A building for small mammals, to be used temporarily for most of the animals taken from the Eastlake Park zoo, could be erected for $10,000. If we should add $10,000 for an aquarium building and $4,000 for two tide-pools the total cost would be $50,000. However, our plans are based upon a unit system of construction following the available funds and yet giving a creditable zoo and aquarium at all stages of development.

The City Council has promised $10,000.00 for construction during the current year with the understanding that the Zoological Society will raise an equal sum by subscription. This together with the appropriation of $5,000.00 for the transference of the animals from Eastlake Park, will create a fund of $25,000.00 with which to construct several of the units as outlined.

THE SAN PEDRO AQUARIUM

The aquarium in Battery Park, New York City, is visited every day in the year by a constant crowded stream of interested people. In Berlin and Naples the aquaria are similarly popular. In Honolulu the coralline animals are so gorgeously colored as to place the Hawaiian establishment in a class of its own. The marine park at San Pedro should be located on the ocean front where the sea-water is uncontaminated by sewage and harbor impurities. On the cliffs skirting the base of San Pedro Hill we might have a site as perfect for this purpose as Griffith Park is for the zoo. Our aquarium would overlook the Pacific where out in the opalescent mist the island of Santa Catalina arises, just as does Capri from the blue waters of the



FROM AN OIL PAINTING BY FRUGULLSTRAND

Bay of Naples. The aquarium building, planned in the mission style with a tower, would crown the crest of the cliff. The construction should be of reinforced concrete with massive walls and pillars for carrying the combined weight of the aquaria and the storage and filter tanks. While complete in itself, this building would represent the first unit of a final edifice to be composed of eight such units surrounding a central patio. The central exhibition room would be like a grotto, since all the light enters from behind black walls through the water of the aquaria. Thus the animals would be seen to the best advantage, while the people seem to walk beneath the surface of the sea, to be thrilled by its beauty and witchery.

In the aquaria may be exhibited colonies of coral polyps, sea-pens, and sea-feathers; delicate medusae and iridescent ctenophores; many rayed star-fishes and long spined, purple sea-urchins; tentacled sea-cucumbers; squids floating like submarine aeroplanes, and long armed devil fishes; all sorts of crabs and worms; coralline fishes, with bands and spots of orange, gold, blue and red, and long waving filamentous fins; indeed, groups of all of the most beautiful and remarkable denizens of the ocean. Under the advantage of aquarial exhibition our own fishermen will be astonished at the beauty of form and color of the very fish they may have pulled from the sea. It should be easy and comparatively inexpensive to transport the wonderful creatures from the coral reefs of Hawaii, to become a source of delight to the thousands of people who can never go to Honolulu. In our marine park colonies of sea-lions, sea-elephants, turtles, pelicans, penguins, and other interesting forms may be at home within rock-bound pools in which the sea-water is renewed by every tide.

AMUSEMENT, EDUCATION AND INVESTIGATION

It has been the experience in all the great cities of the world that no feature of the parks contributes more to the enjoyment of the people than a zoo and aquarium. Animals given a large measure of freedom while protected and well cared for are happy and contented and appeal to the sense of fellowship with life in general. The animals in the enjoyment of their

own play and affairs of friendship and love are an unfailing source of amusement to their human friends.

No zoo would be complete without the opportunity given the children to ride upon ponies and donkeys, or even better, to have the thrill of swinging up on the back of a kind old elephant, or go jogging along, clinging to the hump of a camel. There will be a real necessity for saddle-horses and burros to carry adults, as well as children, over the comfortably graded trails from which the various groups of animals may be seen to the best advantage.

The zoo and aquarium should constitute an important out-of-door laboratory for work in natural history. There should be a supervisor of nature study in the public schools who will lead the teachers in the instruction of the children by means of field excursions and lectures illustrated by stereopticon slides and motion pictures. Such topics might be considered as the geographical distribution of animals, their native surroundings and homes, and the peculiarities in structure which adapt them for survival in the intense struggle for existence.

The charter of the Zoological Society of London provides not only for "the introduction of new and curious subjects of the Animal Kingdom" but also for the "advancement of Zoology and Animal Physiology." The preeminent position of the New York Zoological Park is due to the fact that the large minded men of affairs who first organized and financed the undertaking delegated the actual creation of the institution to Professor Henry Fairfield Osborn, a zoologist of international reputation and influence. Scientific investigators of ability like Director Hornaday, and Curators Beebe and Ditmars were entrusted with the development of the great departments of the enterprise. So in the construction of our zoological park and aquarium, scientific investigation should go hand in hand with the practical application and distribution of knowledge. While keeping the animals primarily as a part of the park system for the pleasure and instruction of the people, it should be essential to study the anatomy and behavior of the creatures in order than they may be cared for in the best manner. The prosection of the animals which die in the park should

demonstrate the nature of the fatal diseases and thus suggest means for prevention. Experiments in pure line and cross breeding should result in more perfect type forms and new and interesting hybrids. The biometric study of variation will enable us to give an exact description of the specific types and to measure the divergence of the variations that may occur under experimentally controlled conditions. Expeditions should be organized for the collection of rare animals from foreign lands and from the islands of the Pacific Ocean, as well as from the various depths of the sea. The results of research and exploration should be presented at stated evening meetings of the Zoological Society and then published as contributions to Zoological Science.

PRESERVATION AND PROTECTION OF ANIMALS

Griffith Park should be completely surrounded by a fence and thus become a reservation for all the native California animals that may need to seek the privilege of sanctuary from

MOUNTAIN TRAIL IN GRIFFITH PARK

extermination. Such a form is the California wapiti, formerly abundant in the San Joaquin and Sacramento valleys, and now reduced to a last tribal remnant. In this class also come the prong-horn antelope and Rocky Mountain bighorn. This service to those of our native animals which are rapidly disap-

pearing must appeal to all. The rescue of the American bison through the devotion of a few enthusiasts is now a familiar story and should prove an inspiration to us. We should be allied with the State Board of Fish and Game Commissioners and the Audubon Society in the splendid efforts they are making in this direction.

Grey squirrels, quails, and pheasants have been placed in our city parks and will learn to eat from the hands of all who love them. The very fact of such guardianship of defenseless animals will develop ethical ideals, for love of the animals lower than man will generate love for man himself. Thus our zoological gardens will become an agency for moral uplift. While fulfilling such an altruistic mission it is an important consideration that the breeding of these rare forms not only from our own land but also those native to distant countries should become a source of profit in the sale and exchange of specimens.

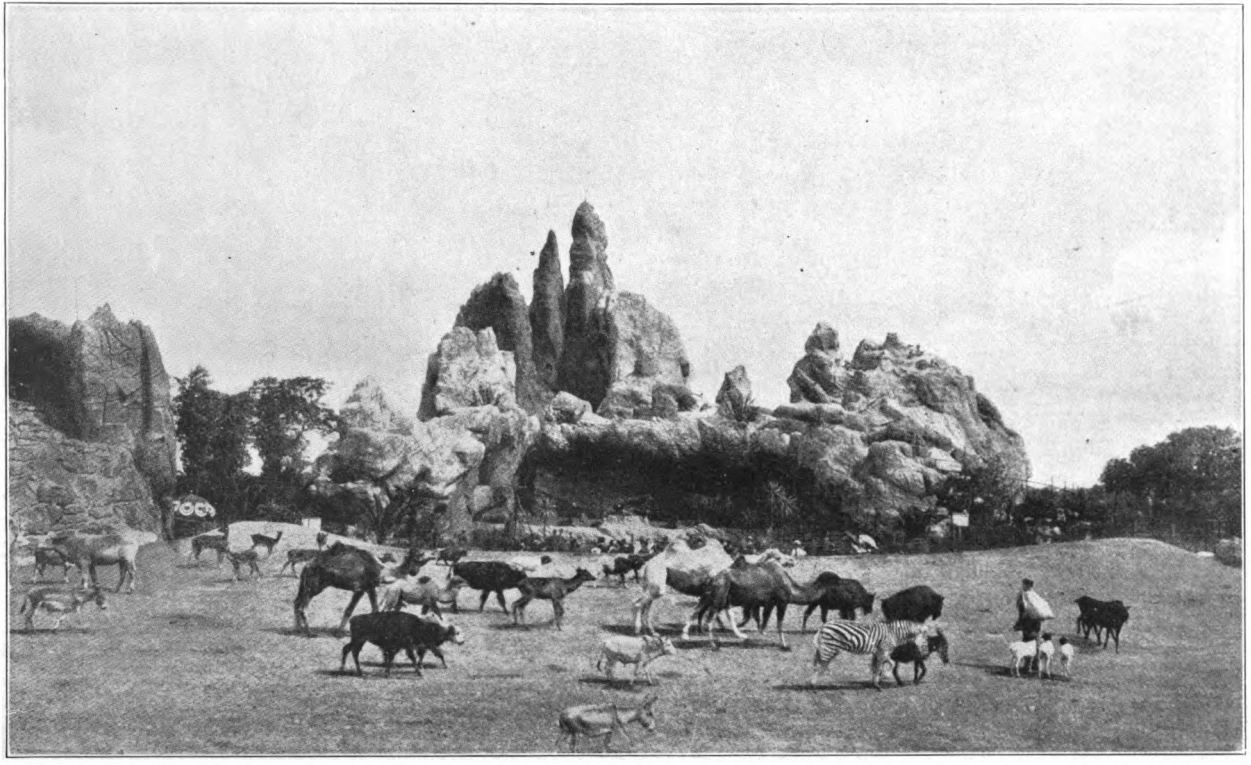
RESERVATIONS FOR PRIMITIVE RACES

In addition to the many groups of animals at Skanson in Stockholm, there are peasants representing remote and primitive districts of Sweden. They have brought their houses and costumes from distant provinces and live as at home. In the village of the Laplanders a herd of reindeer furnishes food and clothing, and the gentle animals, harnessed to the sledges, convey their masters about the place.

Hagenbeck has brought to Stellingen representatives of a number of primitive races who carry on their native trades and other tribal activities and thus constitute an ethnographic exhibit of rare educational value. To preserve in Griffith Park a few families of some of our fast disappearing aboriginal tribes would be even more important than to save the native wapiti. We have valuable collections of folk-lore from many tribes of American Indians, but how much more impressive it would be to have the natives themselves tell their naive stories, sing their appealing songs, and enact their mystic rites before us.

ANIMAL PARADISE

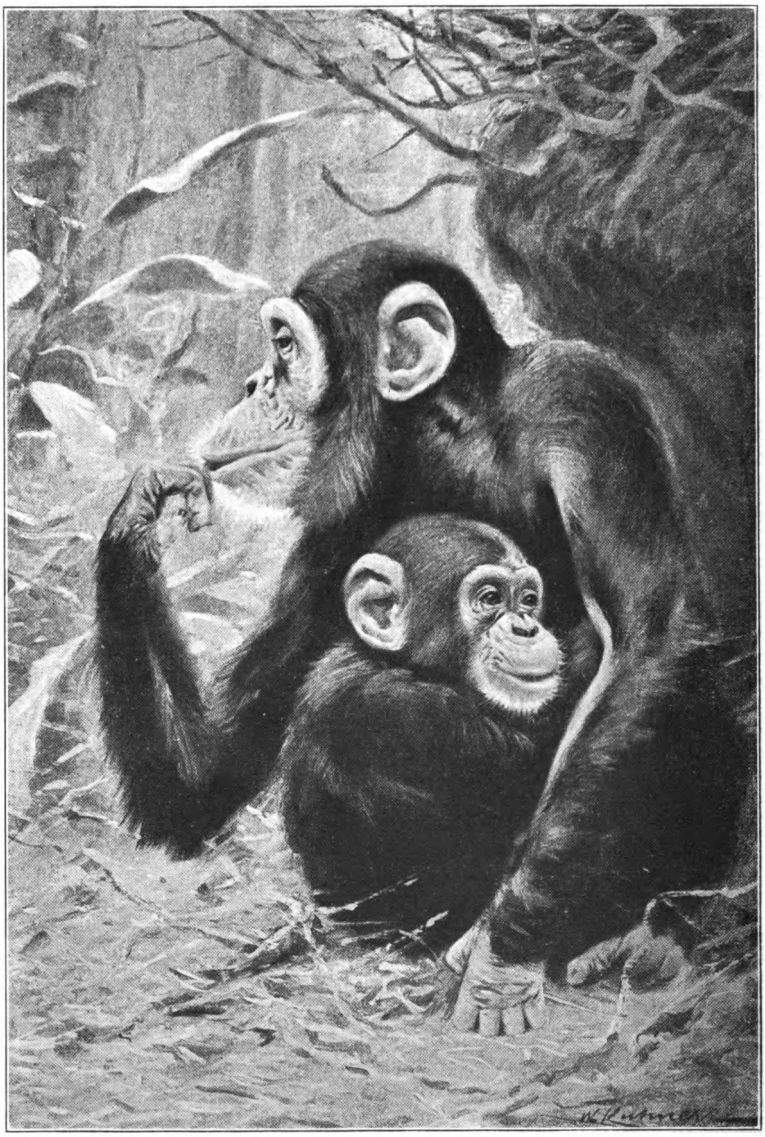
One of the most fascinating exhibits in Carl Hagenbeck's animal park is the happy family which he calls the "animal



ANIMAL PARADISE IN HAGENBECK'S ZOOLOGICAL PARK

paradise". Here are many species of herbiverous mammals living together in peaceful companionship. In one of our Griffith Park valleys we may instal such an assemblage of grass-eating animals. The black horned buffalo from India could graze alongside the great humped American bison. The pure white zebu, marked with the prominent hump on its withers, has been consecrated to Siva. So with us, as under Brahmanic rule, this animal may be kept free from labor and annoyance. Those divergent domesticated camels, the speedy dromedary from the hot sands of Arabia and the wooly-haired lama and its primitive relative, the wild guanaco, from the snow capped Andes, might herd together. On the rocky mountain-side strong and agile goats may fearlessly climb from crag to crag, subsisting on the coarse, indigenous herbage. It is necessary for these creatures to climb over the rocks in order that they may develop strength and wear down the horny substance of their hoofs. At the first break of dawn they reach the highest parts of the mountain, then descend the slopes to return aloft at the setting of the sun. The long eared goat from Abyssinia could listen to the bleat of his one-horned cousin from Tibet. Long haired goats from Angora, in Asia Minor, from Cashmere and Nepal, in India, may flock with the Maltese, Egyptian and Guinean varieties. The dwarf Shetland pony may rub noses with the beautifully striped zebra, the Abyssinian ass and Prjwalsky's horse, representing the three type species from whose ancestors the modern horse has descended. Besides deer from the old world, we may introduce the native mule and blacktailed species, and the pronghorn and bighorn antelopes.

In spite of the wide diversity of temperaments and characters, Herr Hagenbeck has found that such animals live together in mutual understanding and agreement. The small animals wisely make way for the large ones and know how to skilfully avoid the occasional attacks which may be offered. Simple caves blasted from the rocky cliffs, or open thatched sheds, provide sufficient protection from inclement weather during summer or winter, for all of these animals. Even tropical species, if given enough freedom, may become readily acclimatized to the cold and snow of northern winters, and without question to



CHIMPANZEE AND HER YOUNG

the mild climate of Southern California. We may develop such an animal paradise in one valley and gradually extend its range to all of the unoccupied portions of the park. The native pasturage should provide provender for much of the year and at the same time the animals would be of great service in clearing the park of the fuel for forest fires which always threaten the destruction of the larger shrubs and trees. At the head of the valley a mountain lake might be constructed with the effluent stream first forming a picturesque waterfall and then meandering down through the valley, giving refreshment to any creature along its course.

PRIMATES AND ELEPHANTS

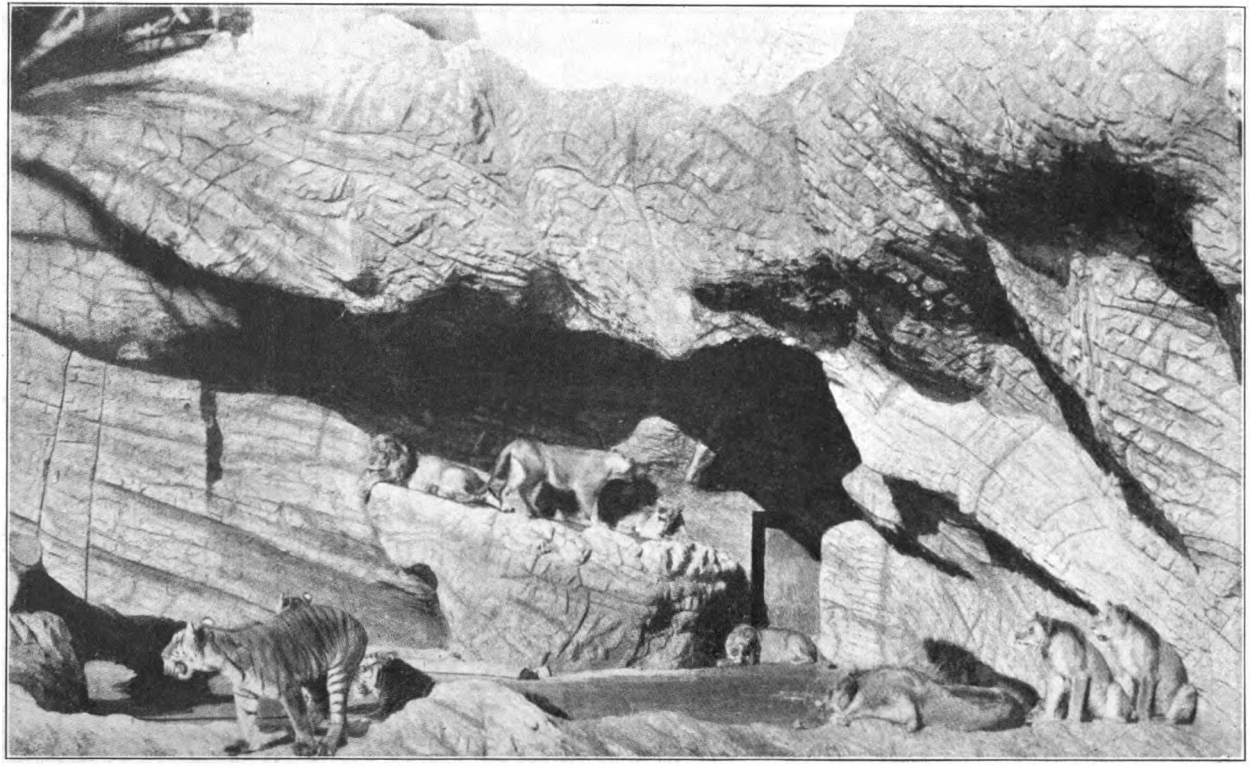
No department of a zoo is of more general interest than that of the primates, including the chimpanzees and gorillas from Western Equatorial Africa, the orangs from Sumatra and Borneo, the gibbons from Asia, the African baboons, the prehensile tailed American monkeys, the squirrel-like marmosets and the lemurs. These highly evolved mammals afford never ceasing amusement and interest not only by the tricks they may have learned to perform but much more by their display of marked individual intelligence in meeting the various conditions of their life.

Both the ordinary Indian elephant and the large eared African species should be represented in our zoo. Hagenbeck employed his elephants in the transport of heavy stones, tree trunks and earth. It is astonishing how obedient these great animals are in following the commands of their keepers. When trained for exhibition, elephants will remember and execute without failure maneuvers as complicated as those of troops of soldiers.

CANYON HOMES FOR BEARS, LIONS AND KINDRED ANIMALS

The head of a canyon, with the precipitous cliff rising on three sides, should serve admirably as a natural home for bears, lions, tigers, panthers, jaguars, leopards, pumas, and kindred animals.

The rock may be blasted from the wall until a large open cave is formed with an overhanging unscalable roof. The



THE HAGENBECK OPEN CAVE FOR LIONS

blasting should be done in such manner that rock masses may be left of varying forms and sizes, separated by bridged and unbridged chasms. Over and among these rocks the creatures may climb or leap, with level resting places here and there about the cave. For certain animals like the lions a moat 18 feet deep and 27 feet wide should be dug across the open end of this ravine and partly filled with water. If a lion should attempt to leap over this barrier he would fall short against the vertical outer wall and thus be compelled to retreat to his den. If the place of observation be on the valley side, the moat may be concealed by various appropriate plants along the margin of the moat nearest the observer. For the care of these dens tunnels would be excavated in such fashion as to escape the notice of the visitor.

Besides the mammals already mentioned there should be included, when possible, groups of bats, hedgehogs, wolves, foxes, rabbits, porcupines, musk rats, squirrels, the rhinoceros, wild horses and asses, zebras, tapirs, cattle, musk-oxen, sheep, antelopes, the giraffe, deer, camels, pigs, hippopotamus, armadillos, ant-eaters, sloths, kangaroos, the opossum, and the duck-billed platypus. When the animals are shy and timid upon arrival it may be necessary to place them in a padded inclosure for a time to prevent injury because of fright. One of the chief elements of success in acclimatization is the feeding of such provender to the freshly captured wild animals as may be readily obtained in their new home.

BIRDS

The city parks should be reservations for all the wild birds that can be enticed within them by scattering food and cultivating many fruit trees. In walking over the Griffith Park trails it is charming to see a bevy of quails scurrying through the undergrowth.

Besides the wild birds nesting freely in the park, we may have many interesting kinds equally at home in a flying cage so large that forest trees may grow within it. Long legged storks and egrets, with beautiful plumes, might wade about in the pools where gulls, ducks and swans could swim, while

pigeons, woodpeckers, crows, thrushes, and many other birds would fly from tree to tree.

The running birds should include the ostrich from Africa, the Australian cassowary, with large casque upon its head, the emu, with but a vestigeal spur representing the wing and the New Zealand apteryx, or kiwi, as it is known from its cry.

The pheasant house should be surrounded by a thicket so that the birds may wander among the trees as in their native forests. The grasses and shrubs, with berries and other food, the pheasants prefer, would be cultivated in order that the birds could feel at home and thus readily breed. In the many varieties of these long-tailed birds the gorgeous plumage of scarlet, orange, golden, steel-blue and green would shimmer in the sunlight.

Among the other birds which should be included are: birds of paradise, owls, gaily colored parrots, great beaked toucans, eagles, vultures, penguins and humming birds.

REPTILE HOUSE, VIVARIUM AND FRESH-WATER AQUARIUM

The reptile house should have overhead light and cages with glazed fronts for the giant pythons from India and Borneo, the various venomous serpents, the poisonous Gila monster and the smaller reptiles. The open pools for turtles, alligators and crocodiles should have a background of green plants.

The building for the vivarium and fresh-water aquarium should have a glass roof like a greenhouse. Under the ferns and creepers chameleons may hide, changing their colors at will. In the aquaria the curious nesting habits of various fishes may be observed. Climbing-fishes from India can crawl out of the water upon the limbs of a mangrove tree and sun themselves. Giant frogs, little green tree-snakes and small lizards may be seen with difficulty because of their protective colors which are like the green leaves, or brown stones upon which the animals rest.

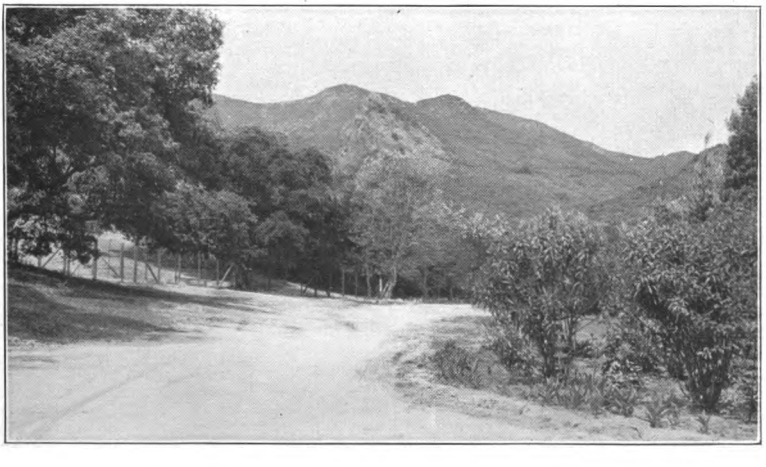
The exhibits of insects can be of much practical importance in showing the relation of insects to agriculture. One may observe the complicated activities of colonies of ants and bees and

the life histories of butterflies, living in glass-sided cases. The "walking leaves" and "walking sticks" would display their resemblance in form and color to the objects upon which they live.

FOSSIL ANIMALS

The representation of animals can not be complete until the fossil forms are restored to a semblance of life and placed within an environment representing the geological past. Hagenbeck has reconstructed a Mesozoic landscape in which the archaeopteryx, the ancestral link between reptiles and birds, is shown in company with the dolphin-shaped ichthyosaur and the plesiosaur, with the head of a snake terminating a swan-like neck. Gigantic dinosaurs, ninety feet long, from the rocks of Wyoming are seen as if feeding upon the leaves of the trees.

In broadly outlining the various possible departments of our institution it is understood that the beginnings can consist of only such units as may be established with the means in hand. Even if we already possessed great wealth it would be better to proceed with foresight and caution in order to work properly toward our ideals. When we thus build for the centuries our faith and courage must be adequate to the great task. There is an inspiration in the vision of the splendid zoological park and aquarium, of the Los Angeles that is to be, when those who follow us shall have completed the structure we have planned and, of which, we are about to lay the foundations.



THE
LOS ANGELES ZOOLOGICAL SOCIETY

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Headquarters: Exposition Park,
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Membership Fee	$10.00
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Application for Membership in the Los Angeles Zoological Society should be sent to the Secretary.